

Patent Claims

1. Apparatus for positioning a clamp-on flow measuring device (1) on a containment (7),
5 through which a medium (9) is flowing, comprising:
at least two ultrasonic transducers (2; 3), which emit measuring signals into the
containment (7) and/or receive measuring signals from the containment (7);
a positioning unit (11) for the variable positioning of the ultrasonic transducers (2, 3) on
the containment (7);
10 a control/evaluation unit (8), which calculates from predetermined process and/or
system variables a characteristic, desired variable ($T_{desired}$) of the measuring signals
and which, on the basis of a comparison of the calculated, desired variable ($T_{desired}$)
with the corresponding, measured, actual variable (T_{actual}), determines whether the
ultrasonic transducers (2, 3) are optimally positioned or whether the positions of the
15 ultrasonic transducers 2, 3 need to be changed; and
an indicating unit (12), which indicates to operating personnel a required change in
position and/or the direction in which a change in position needs to occur.
2. Apparatus as claimed in claim 1,
20 characterized in that
the indicating unit (12) is embodied such that it signals to the operating personnel
optically and/or acoustically the correct position of the ultrasonic transducers (2, 3) or
such that the indicating unit (12) gives to the operating personnel, if necessary,
successive indications, in which direction the ultrasonic transducers (2, 3) need to be
25 displaced for the purpose of correct positioning.
3. Apparatus as claimed in claim 1 or 2,
characterized in that
the indicating unit (12) is an integral part of the clamp-on flow measuring device (1).
30
4. Apparatus as claimed in claim 1 or 3,
characterized in that

the indicating unit (12) is a display (13).

5. Apparatus as claimed in claim 4,
characterized in that

- 5 the direction of displacement, and/or the amount of displacement, of the two ultrasonic transducers (2, 3) is placed on the indicating unit in the form of numerical and/or graphical symbols.

6. Apparatus as claimed in claim 1 or 3,

- 10 characterized in that

the indicating unit (12) comprises at least one optical and/or at least one acoustical reporting element (14), wherein the reporting element (14) is operable in different modes.

- 15 7. Apparatus as claimed in claim 6,
characterized in that

the optical reporting element (14) is a light-emitting diode, wherein the modes comprise a blinking mode, an on-mode and/or an off-mode.

- 20 8. Apparatus as claimed in claim 6,
characterized in that

the optical reporting element (14) is embodied such that the different modes are associated with different color characteristics and/or symbols.

- 25 9. Apparatus as claimed in claim 6,
characterized in that

the acoustic reporting element (14) is embodied such that the different modes are implemented by different pitches and/or different repetition frequencies of at least one pitch.

30

10. Apparatus as claimed in one or more of the preceding claims,
characterized in that

the characteristic variable is the intensity of the measuring signals and/or the travel time (T) of the measuring signals.